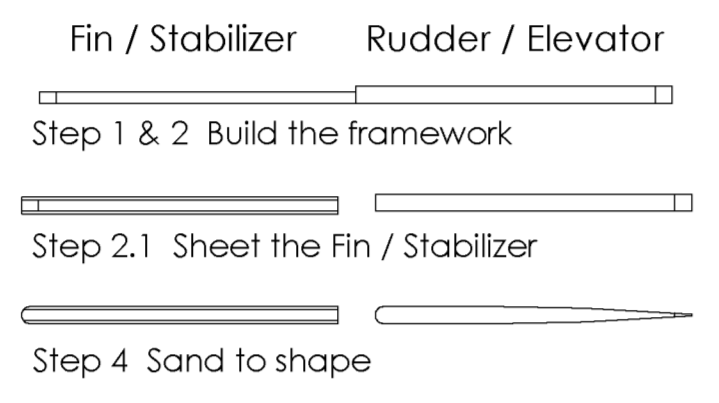


**Tail Group Instructions**

- Build rudder and elevators from 3/16" balsa stock
  - These parts will be covered as open frames
- Build vertical fin and horizontal stabilizer from 3/32" balsa stock
  - Sheet these parts on each side with 1/16" balsa
  - Once sheeted and sanded, the fin and stabilizer will match the 3/16" thickness of the rudder and elevators
- All bracing is 3/32" strip stock
- Radius the leading edge and taper the trailing edge of the tail group parts



**Motor Pod Instructions**

- Attach Doublers to outside walls of formers M3 and M4
- Trap Firewall M2 between formers M3 and M4
  - These formers set the motor's thrust angles
- Attach the M2-M4 assembly to Base M1
- Attach a former M5 to each side of M1
- Sheet the top of the formers with 1/16" balsa
- Run the pod struts up through the wing and into the pod
  - Epoxy the struts into position

**The Volmer VJ-22 Sportsman**

Volmer Jensen designed the original VJ-22 in 1957, and maiden his full-scale prototype the following year. Legend has it that his goal was to combine his love of flying with his interest in scuba diving. Mr. Jensen was still flying his Sportsman thirty years later.

Jensen marketed his design as a homebuilt aircraft. To simplify construction, many parts like the wings came from popular GA aircraft. Both the horizontal stabilizer and the wings were supported with struts. The aircraft was typically fitted with tricycle landing gear using main wheels that pivoted forward to clear the water when in the up position.

Around 1000 plans have been purchased by builders hoping to own their own amphibian. Not unlike RC modelers, only 10-15% of these projects were completed.

In another parallel with modelers, builders of the full-scale VJ-22 frequently modified the design. Aircraft can be found in both tractor and pusher configurations, with and without landing gear, and with different tail designs including a T-tail.

**The Model**

Float flying is my favorite RC activity. The goal for this design was to create a simple and durable waterplane that could be cut easily by hand. Unlike my typical stick-and-tissue type designs that are planned from the beginning with laser cutting in mind, this one has no stringers or complex shapes. The whole fuselage is sheeted without complex curves. The wing is held down with rubber bands in the old-school fashion.

A few liberties were taken with Mr. Jensen's design. The rudder was reshaped to function better as a water rudder. I went with the tractor option on my prototype to help keep the Cg forward, but the mount can be reversed. I left off the wheels and struts to keep the build simple, but scale nuts are welcome to add these details in.

**Motor Pod Templates and Assembly**

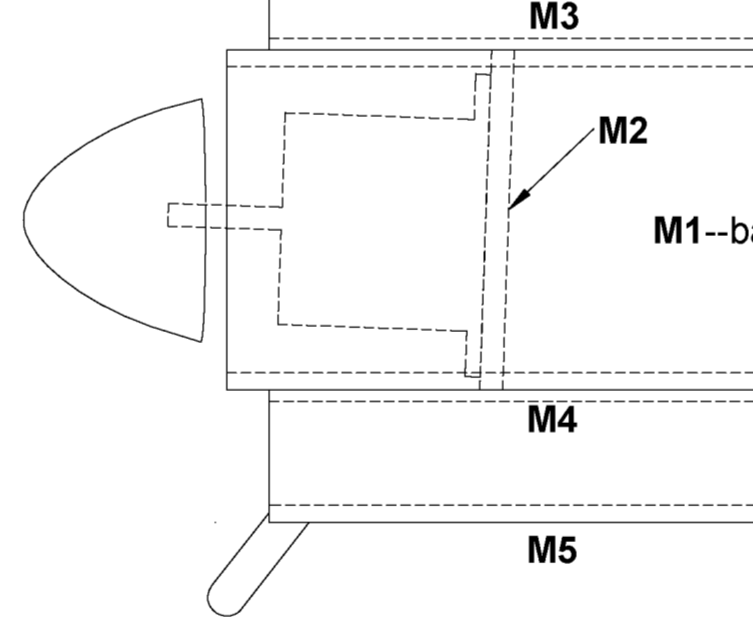
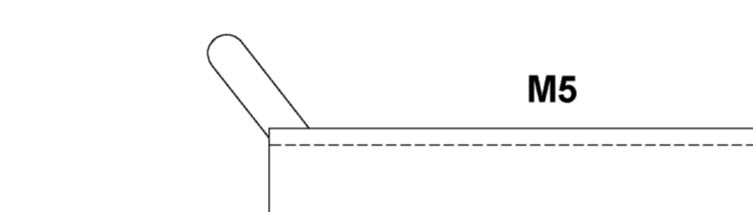
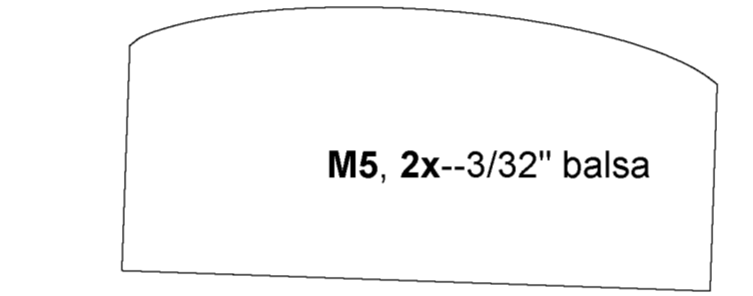
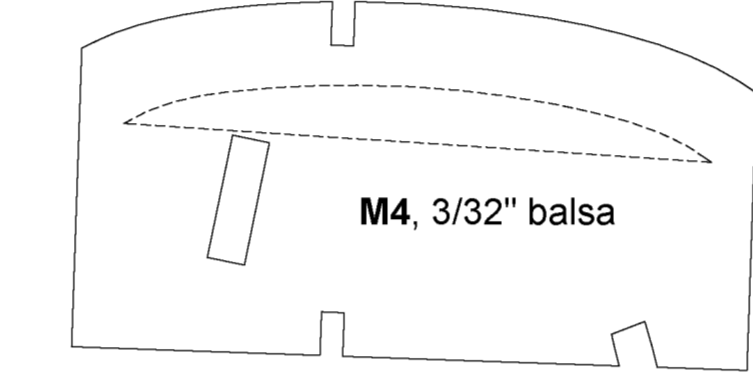
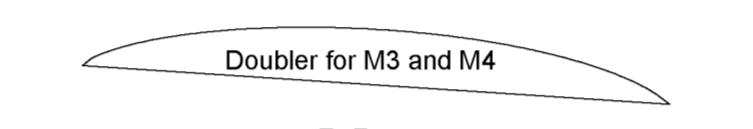
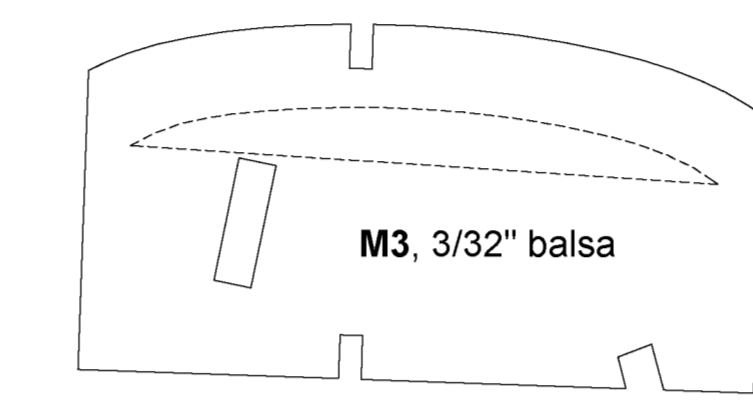
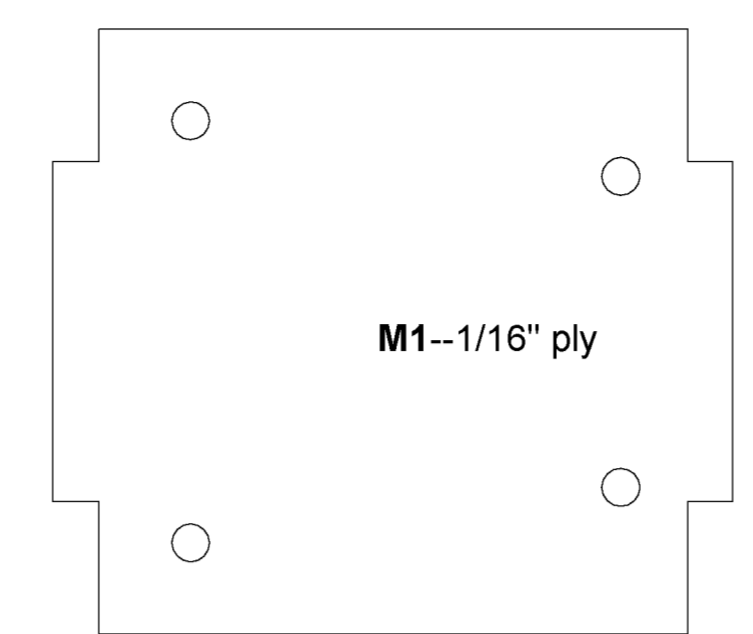
**PROTOTYPE SPECIFICATIONS**

Wingspan	50.0"
Length	32.0"
Weight	29.5oz
Wing Area	178.8 sq in
Power	L2210A 1650kV
Propellor	7 x 6 APC
Battery	3S 2200mAh

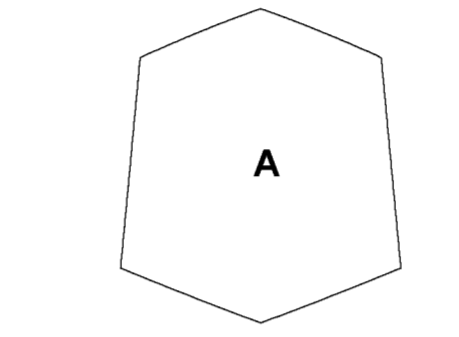
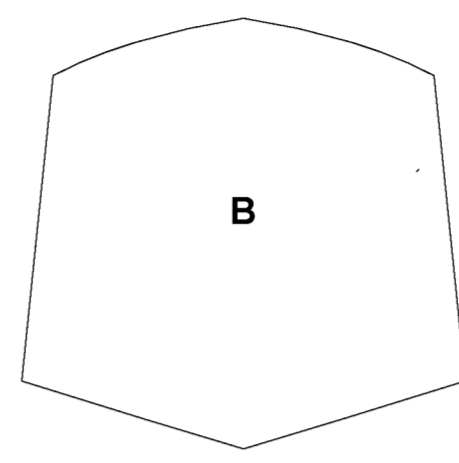
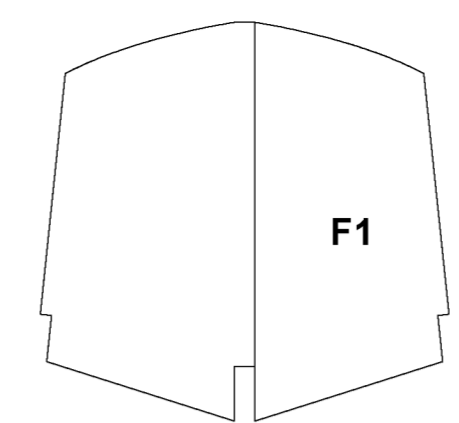
**CONTROL THROWS**

	LOW	HIGH
Aileron	1/2"	5/8"
Elevator	3/8"	1/2"
Rudder	1/4"	5/8"

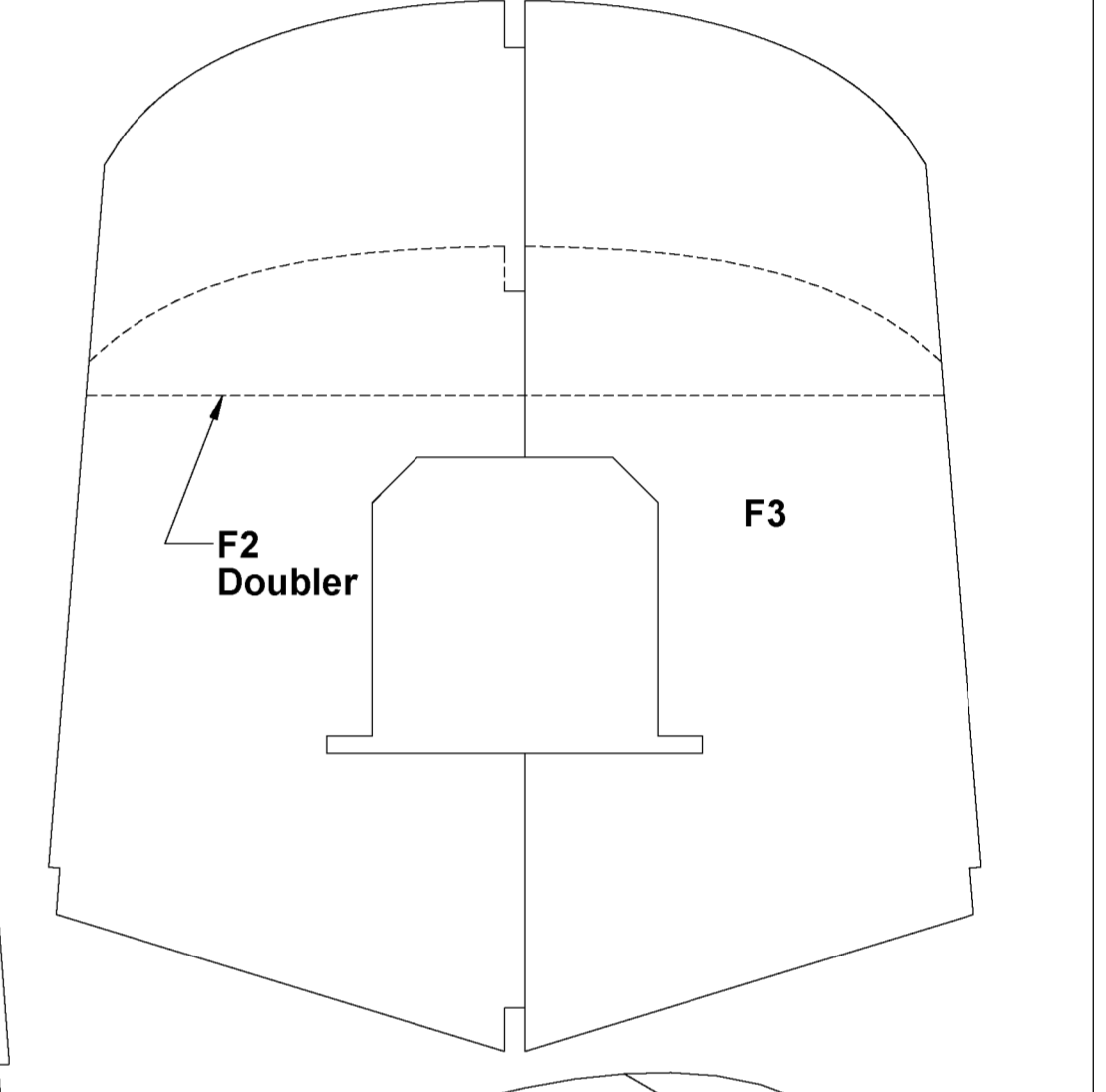
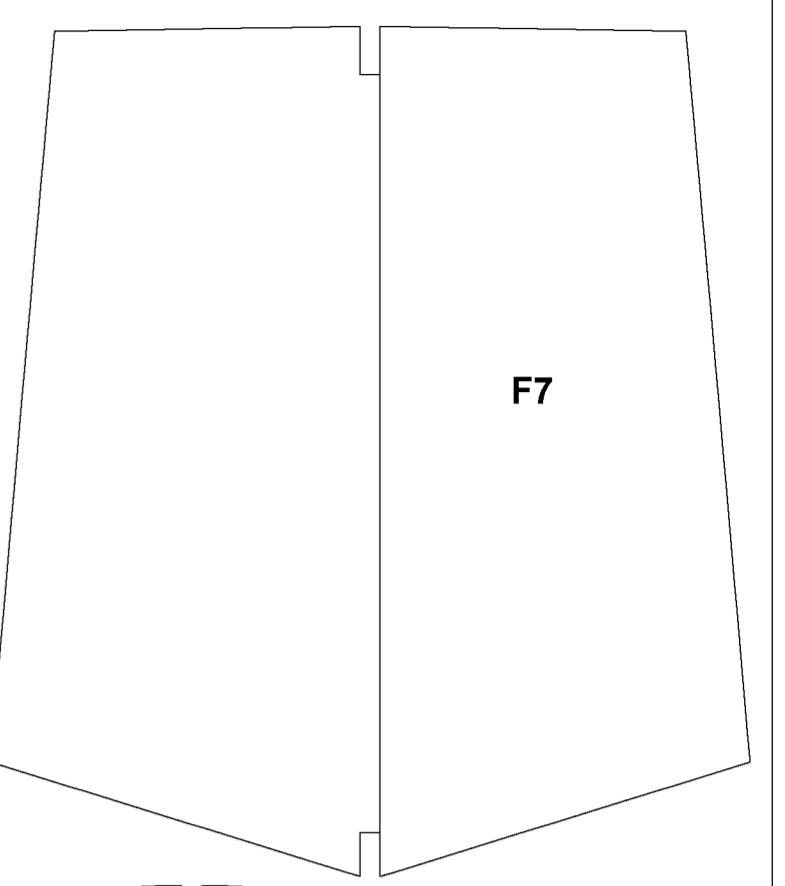
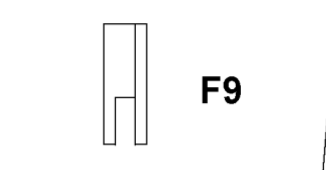
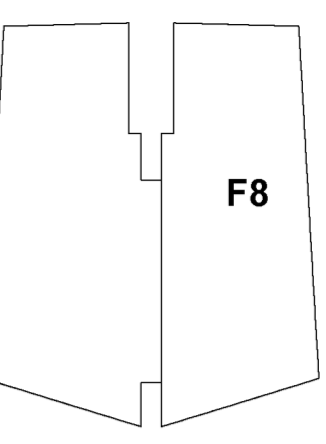
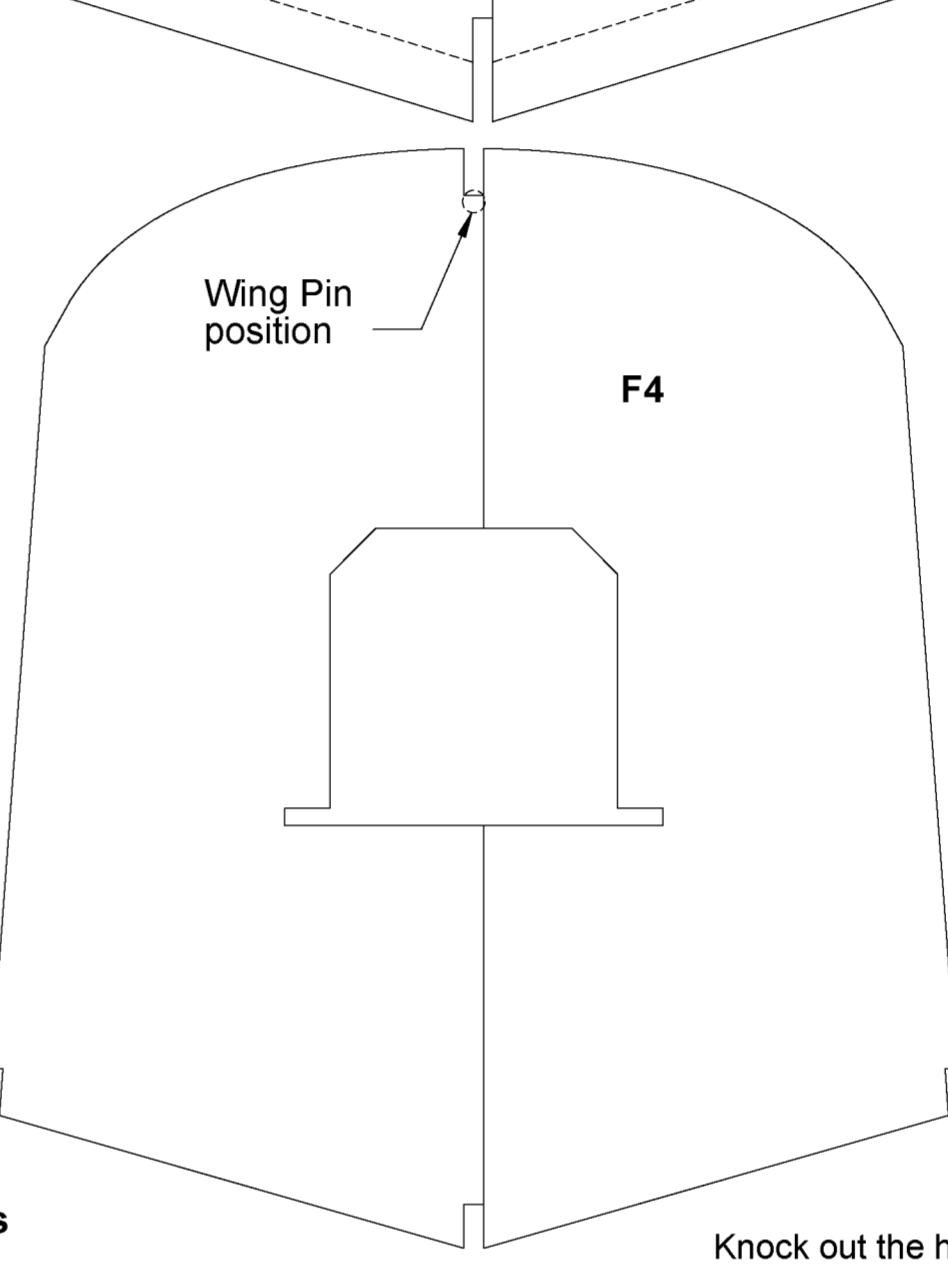
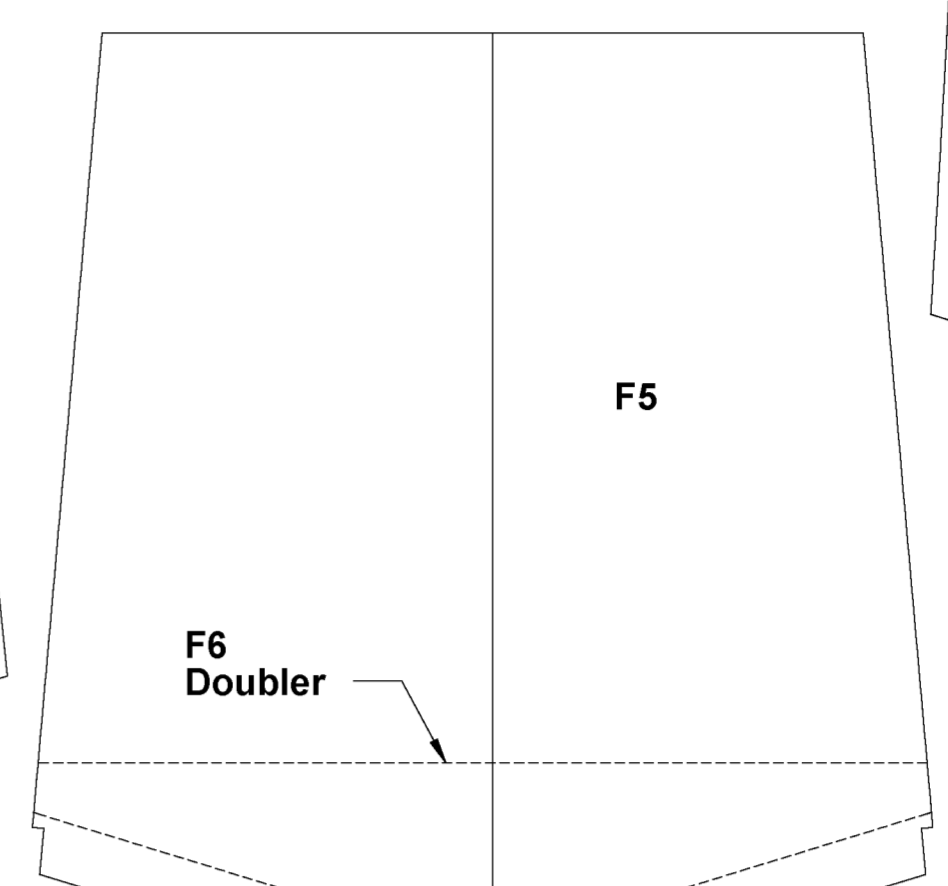
Large Rudder on High for water handling. Prop Brake ON to reduce pitch up with power off.



**Former Templates--3/32" balsa unless noted**

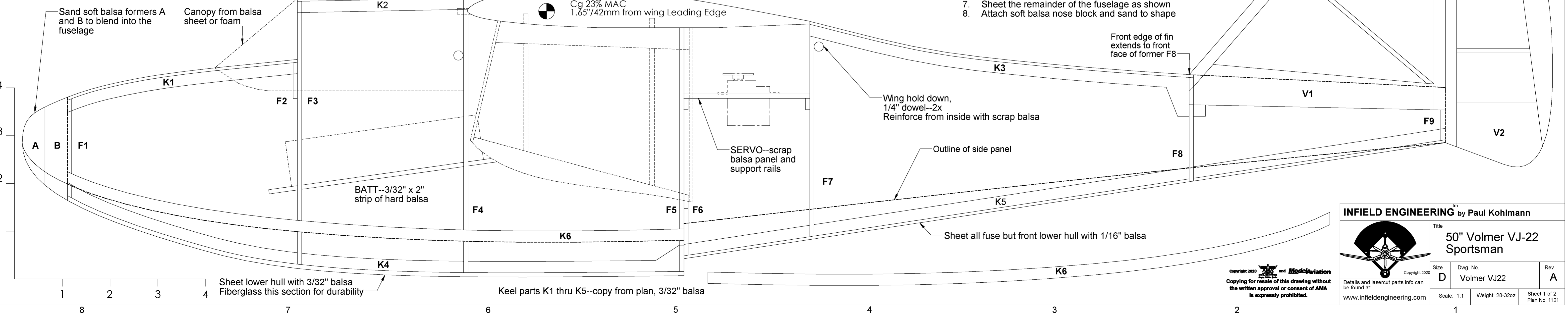
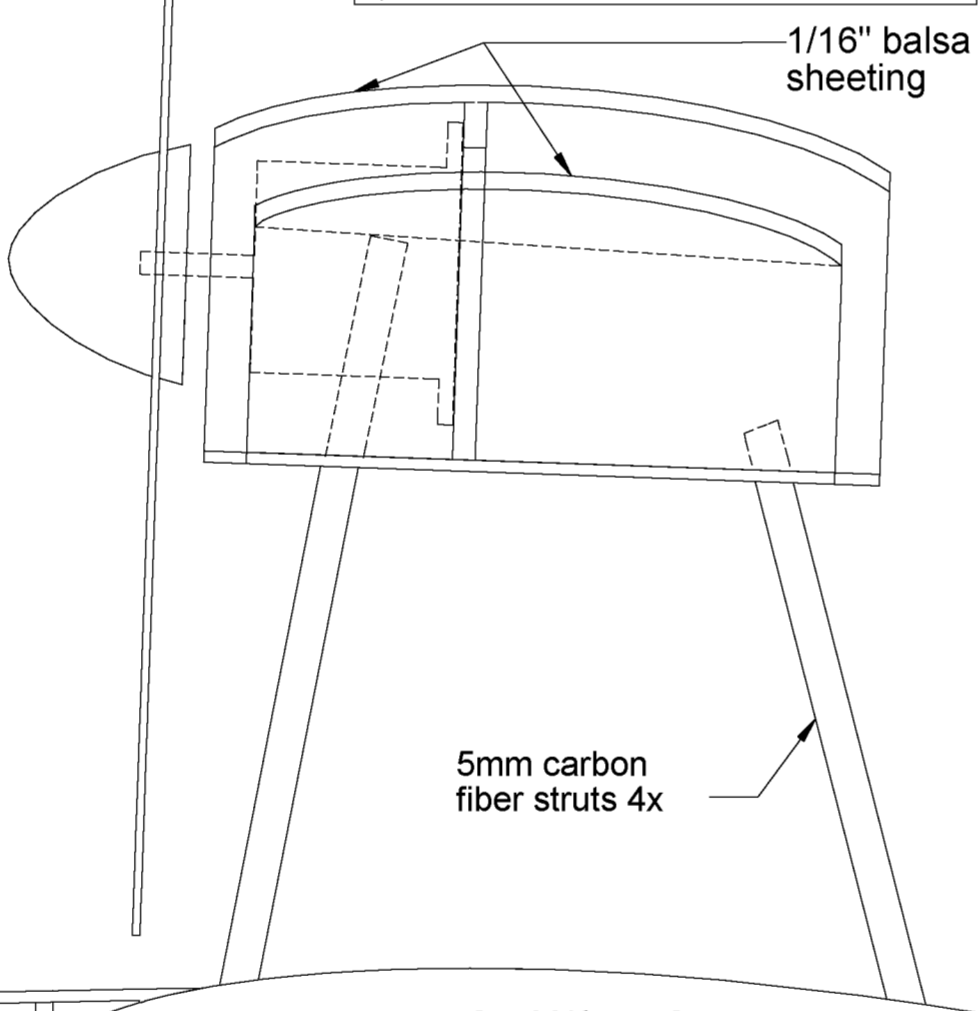


A and B formers--1/2" soft balsa



**Fuselage Instructions**

- Pin Keels K1 thru K5 to board
  - Cut K2 and K5 from 3/32" x 1/4" strip stock
- Mount left half of Formers F1 thru F9 perpendicular to board
- Join the formers F1, F3, F4, and F5 with chine keel K6
- Sheet the fuselage side with 1/16" balsa
  - Use the side view as a guide: the top of the fuselage behind the wing is flat, the lower edge of the side panel is marked on the plan
- Add the bottom sheeting to stiffen the assembly
- Unpin the assembly and build the right side free from the board
  - Insert Batt and Servo trays into left side assembly
  - Attach right half Formers to the left side assembly
- Sheet the remainder of the fuselage as shown
- Attach soft balsa nose block and sand to shape



**INFIELD ENGINEERING** by Paul Kohlmann

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Scale: 1:1 Weight: 28-32oz Sheet 1 of 2 Plan No. 1121

50" Volmer VJ-22 Sportsman

Rev A